

## Patent claims:

1. A method for cultivating microorganisms of the genus *Thraustochytriales*, wherein the microorganisms are cultivated in a fermentation medium without adding sodium salts and chloride salts, the total salt content being less than 3.5 g/L of total salts.
2. The method according to claim 1, wherein the microorganisms bring forth a production of more than 30 wt% oil per unit of weight of dry biomass, preferably of more than 35 wt% oil per dry biomass.
3. The method according to claim 1 or 2, wherein up to 3 g/L  $\text{CaCO}_3$ , preferably 1 g/L are added to the medium.
4. The method according to any one of the preceding claims, wherein the microorganisms bring forth a production of more than 10 %, preferably more than 14 %, and very particularly preferably more than 18 % DHA per dry biomass.
5. The method according to any one of the preceding claims, wherein the microorganisms bring forth a production of more than 5 %, preferably more than 7 %, and very particularly preferably more than 10 % DPA per dry biomass.
6. The method according to any one of the preceding claims, characterized by the use of a low salt medium, the total salt content of which is in the range < 15 % of the salt content of sea water, preferably < 12 %, particularly preferably < 10 % and very particularly preferably < 8 %.
7. The method according to any one of the preceding claims, characterized in that the sum of the weight fractions of  $\text{Na}^+$  and  $\text{Cl}^-$  ions in the low salt medium comprises less than 1.75 g/L.
8. The method according to any one of the preceding claims, characterized in that the total sodium content of the low salt medium is less than 150 mg/L.

9. The method according to any one of the preceding claims, characterized in that the total chloride content of the low salt medium is less than 250 mg/L.
10. The method according to any one of the preceding claims, characterized in that the low salt medium comprises glucose, yeast extract, magnesium sulfate, calcium carbonate and potassium phosphate.
11. The method according to claims 1 to 9, characterized in that the low salt medium comprises glucose, corn steep liquor, magnesium sulfate, calcium carbonate and potassium phosphate.
12. The method according to claim 10 or 11, characterized in that the low salt medium comprises magnesium sulfate, calcium carbonate and potassium phosphate at less than 3 g/L each, particularly preferably at less than 1 g/L each.
13. The method according to any one of the preceding claims, characterized in that the low salt medium has a pH value of between 3 and 10, preferably of between 5 and 7.
14. The method according to any one of the preceding claims, characterized in that the cultivation takes place between 10°C and 40°C, preferably between 25°C and 35°C.
15. The method according to any one of the preceding claims, characterized in that the cultivation takes place for 1 to 10 days, preferably for 3 to 9 days.
16. The method according to any one of the preceding claims, characterized in that the microorganism belongs to the genus *Schizochytrium*, *Thraustochytrium* or *Ulkenia*.
17. The method according to any one of the preceding claims, characterized in that the microorganism is *Ulkenia* sp. SAM 2179.
18. The method according to any one of the preceding claims, characterized in that the microorganism is *Schizochytrium* sp. SR 21.

19. Oil having a content of at least 10 % DHA, produced using a method according to any one of the claims 1 to 18 and subsequent isolation of the oil from the culture broth and/or the biomass available therein.
20. Oil having a content of at least 5 % DHA, produced using a method according to any one of the claims 1 to 18 and subsequent isolation of the oil from the culture broth and/or the biomass available therein.
21. DHA of at least 90 % purity, produced using a method according to any one of the claims 1 to 18 and subsequent isolation of the DHA from the culture broth and/or the biomass available therein.
22. DPA of at least 90 % purity, produced using a method according to any one of the claims 1 to 18 and subsequent isolation of the DPA from the culture broth and/or the biomass available therein.
23. Biomass obtainable by means of a method according to any one of the claims 1 to 18 and subsequent separation of the biomass from the culture broth.
24. Animal feed comprising biomass according to claim 23.
25. Foodstuff for human nutrition comprising biomass according to claim 23.